

PROTEIN LEVEL IN VARICUS TISSUES OF THE PRAWN, *Penaeus  
merguiensis* De Man (CRUSTACEA DECAPODA,  
PENAEIDAE) AT DIFFERENT STAGES OF OVARIAN MATURATION

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 Protein level varicus tissues of the prawn, Penaeus merguensis  
 De Man (Crustacea decapoda,penaeidae) at different stages of  
 ovarian maturation / Mohamed Kamil Abdul Rashid.



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PRAWN, *Penaeus merguensis* De Man (CRUSTACEA,  
DECAPODA, PENAEIDAE) AT DIFFERENT STAGES OF  
OVARIAN MATURATION.

BY

To my mother and father  
MOHAMED KAMIL B. ABDUL RASHID  
...brothers and sisters  
and fellow fishermen...  
..... with love.

A Project Report submitted in partial fulfilment of  
the requirement for the Degree Bachelor of Science  
(Fisheries).

FACULTY OF FISHERIES AND MARINE SCIENCE  
UNIVERSITI PERTANIAN MALAYSIA

April 1984.

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To my mother and father

...brothers and sisters

and fellow fishermen...

.....with love.

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#### ABSTRACT

The gonadosomatic indices (GSI) of forty penaeid prawns, *Penaeus merguensis* at different stages of ovarian maturation were determined and found to be significantly different ( $P < 0.05$ ). Analyses of protein levels in their ovaries and midgut glands showed an increase in the ovary (10 - 85 mg/g tissue) and a decrease in the midgut gland (353 - 195 mg/g tissue), with ovarian maturation. There was a positive correlation ( $r = 0.67$ ) between the ovary and GSI and a negative correlation ( $r = -0.42$ ) between the midgut gland and GSI. Protein levels in the haemolymph (0.77 - 3.43 mg/g haemolymph) also showed a positive correlation ( $r = 0.45$ ); however there was no correlation for the protein levels in the muscles ( $r = -0.29$ ). The physiological significance of the results was discussed.

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ABSTRAK

Indeks-indeks gonadosomatik (IGS) bagi empat puluh ekor udang penaeid, *Penaeus merguensis* pada beberapa peringkat kematangan ovari telah ditentukan dan didapati mempunyai perbezaan yang bererti ( $P < 0.05$ ). Analisis kandungan protein di dalam ovari dan kelenjar usus tengah menunjukkan bahawa terdapat peningkatan kandungan protein di dalam ovari (10 - 85 mg/g tisu) dan penurunannya di dalam kelenjar usus tengah (353 - 195 mg/g tisu), ini selaras dengan kematangan ovari. Korelasi yang positif ( $r = 0.67$ ) didapati di antara ovari dan IGS. Untuk kelenjar usus tengah dan IGS pula, korelasinya adalah negatif ( $r = -0.42$ ). Kandungan protein di dalam hemolimfa (0.77 - 3.43 mg/g hemolimfa) juga menunjukkan korelasi yang positif ( $r = 0.45$ ). Walaubagaimanapun tiada korelasi didapati bagi peringkat-peringkat kandungan protein untuk otot ( $r = -0.29$ ). Pengertian-pengertian fisiologikal untuk keputusan yang didapati dibincangkan.

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